WHAT IS CLAIMED IS:

1. An apparatus comprising:

a voltage regulator converter, the voltage regulator converter comprising N (N>1) phases; and

a voltage regulator controller coupled to the voltage regulator converter and to control the voltage regulator converter to generate a first current within a first one of the N phases and to generate a second current within a second one of the N phases,

wherein the first current is different from the second current.

2. An apparatus according to Claim 1, further comprising:

N feedback circuits, each of the N feedback circuits coupled to the voltage regulator controller and to one of the N phases, wherein one or more electrical elements of one of the N feedback circuits exhibits an electrical value that is different from an electrical value exhibited by a corresponding one or more electrical elements of another one of the N feedback circuits.

3. An apparatus according to Claim 2, wherein the one or more electrical elements of the one of the N feedback circuits comprises a first resistor, wherein the one or more electrical elements of the another one of the N feedback circuits comprises a second resistor, and wherein a resistance value associated with the first resistor is different from a resistance value associated with the second resistor.

4. An apparatus according to Claim 3, wherein the first resistor and the second resistor comprise current-sensing resistors.

5. An apparatus according to Claim 1, further comprising:

N feedback circuits, each of the N feedback circuits coupled to the voltage regulator controller and to one of the N phases,

wherein the voltage regulator controller is to sense a first sensed current value from a first of the N feedback circuits coupled to the first one of the N phases in response to the first current,

wherein the voltage regulator controller is to sense a second sensed current value from a second of the N feedback circuits coupled to the second one of the N phases in response to the second current, and

wherein the first sensed current value and the second sensed current value are substantially identical.

6. An apparatus according to Claim 5,

wherein the first of the N feedback circuits comprises a first current sensing resistor,

wherein the second of the N feedback circuits comprises a second current sensing resistor, and

wherein a resistance value associated with the first current sensing resistor is different from a resistance value associated with the second current sensing resistor.

7. An apparatus according to Claim 5, wherein the first one of the N phases is located in a more thermally-sensitive area than the second one of the N phases, and wherein the first current is less than the second current.

8. An apparatus according to Claim 1, wherein the first current is output by the first one of the N phases, and wherein the second current is output by the second one of the N phases.

9. An apparatus according to Claim 1, wherein the first one of the N phases is located in a more thermally-sensitive area than the second one of the N phases, and wherein the first current is less than the second current.

10. A method comprising:

sensing a first current from a first feedback circuit coupled to a first phase of a voltage regulator converter;

sensing a second current from a second feedback circuit coupled to a second phase of the voltage regulator converter; and

controlling the voltage regulator converter to generate a third current within the first phase and to generate a fourth current within the second phase,

wherein the first current is substantially identical to the second current, and

wherein the third current is different from the fourth current.

11. A method according to Claim 10, wherein sensing the first current comprises:

sensing the first current from a first current sensing resistor of the first feedback circuit, and

wherein sensing the second current comprises:

sensing the second current from a second current sensing resistor of the second feedback circuit.

12. A method according to Claim 11,

wherein a resistance value associated with the first current sensing resistor is different from a resistance value associated with the second current sensing resistor.

13. A method according to Claim 10, wherein the first phase is located in a more thermally-sensitive area than the second phase, and wherein the third current is less than the fourth current.

14. A method according to Claim 10, wherein the first current is output by the first phase, and wherein the second current is output by the second phase.

15. A system comprising:

a microprocessor;

a double data rate memory coupled to the microprocessor; and

a voltage regulator to provide a voltage to the microprocessor, the voltage regulator comprising:

a voltage regulator converter, the voltage regulator converter comprising N (N>1) phases; and

a voltage regulator controller coupled to the voltage regulator converter and to control the voltage regulator converter to generate a first current within a first one of the N phases and to generate a second current within a second one of the N phases,

wherein the first current is different from the second current.

16. A system according to Claim 15, further comprising:

N feedback circuits, each of the N feedback circuits coupled to the voltage regulator controller and to one of the N phases, wherein one or more electrical elements of one of the N feedback circuits exhibits an electrical value that is different from an electrical value

exhibited by a corresponding one or more electrical elements of another one of the N feedback circuits.

17. A system according to Claim 16, wherein the one or more electrical elements of the one of the N feedback circuits comprises a first resistor, wherein the one or more electrical elements of the another one of the N feedback circuits comprises a second resistor, and wherein a resistance value associated with the first resistor is different from a resistance value associated with the second resistor.

18. A system according to Claim 15, further comprising:

N feedback circuits, each of the N feedback circuits coupled to the voltage regulator controller and to one of the N phases,

wherein the voltage regulator controller is to sense a first sensed current value from a first of the N feedback circuits coupled to the first one of the N phases in response to the first current,

wherein the voltage regulator controller is to sense a second sensed current value from a second of the N feedback circuits coupled to the second one of the N phases in response to the second current, and

wherein the first sensed current value and the second sensed current value are substantially identical.

19. A system according to Claim 18,

wherein the first of the N feedback circuits comprises a first current sensing resistor,

wherein the second of the N feedback circuits comprises a second current sensing resistor, and

wherein a resistance value associated with the first current sensing resistor is different from a resistance value associated with the second current sensing resistor.

20. A system according to Claim 15, wherein the first current is output by the first one of the N phases, and wherein the second current is output by the second one of the N phases.

21. A system according to Claim 15, further comprising:

a motherboard coupled to the microprocessor and to the voltage regulator,

wherein the first one of the N phases is located in a more thermally-sensitive area of the motherboard than the second one of the N phases, and wherein the first current is less than the second current.